EFFECTIVENESS AND UTILITY OF TERMINAL TABLET AS ELECTRIC TEXTBOOKS FOR NURSING PRACTICUM

Yumiko Nakamura*, Kaori Fukayama * and Yukie Majima**

School of Nursing, Osaka Prefecture University, 3-7-30 Fabikino Fabikinoshi Osakafu, Japan

*College of Sustainable System Sciences, Osaka Prefecture University, Japan, 1-1 Gakuentyo Sakaishi Osakafu, Japan***

ABSTRACT

Based on the Nursing Learning Support System, which was developed and tested by our university, this study developed the "Digital Nursing Dictionary (ver. 2)," a terminal tablet with a new function of an electronic books, by taking advantage of the developed ICT. This paper describes an interim report of the results of those assessments.

KEYWORDS

Mobile learning, Terminal tablet, Nursing education, Nursing practicum

1. INTRODUCTION

The system development and operational model construction of e-learning have advanced in the educational engineering field. However, even given high needs for e-learning, the nursing field is confronting important problems of the deficiency of educational materials and wide gaps in informational technological literacy. Now, we have developed the Digital Nursing Dictionary (Ver.2), with educational material contents and electric textbooks loaded on a terminal tablet. This study was undertaken as a performance assessment using the terminal tablet in nursing practicum to verify its effectiveness and utility.

2. RESEARCH METHODS

The method is as follows: (1) Subjects are 76 of 137 4th grade nursing students. (2) The period of performance assessment: October 2012 – July 2013. (3)The main research contents of self-completed questionnaire survey: The status, time, and place of terminal tablet's use, the status of the internet connection, the usefulness of the contents, and the evaluation of functions, etc. (4) The data were analyzed using statistical methods with basic descriptive statistics and analysis of free description response contents. (5) We obtained permission to conduct the study from this university's ethical commission.

Regarding the terminal tablet development: (1) Electronic textbooks: We created electronic books using PDF data of the text and index provided by the publishers. (2) Educational material contents for the nursing support system: The system include 132 scenes of nursing simulated examples, nursing skill video images with 100 titles, 1,000 pages of knowledge cards, and 180 questions from the national examination. (3) The terminal tablet: We used (RW-T110; Sharp Corp.), which weighed about 640 gram had a 10.1 inch TFT liquid crystal screen. The platform was Android[TM] 2.3. Wireless LAN communication was used. Functions of the terminal tablet is 1) Handwriting (marker), bookmark function 2) Text input 3) Dictionary search function.

3. RESULTS

Basic information of participants, 73 (96.1%) were female and 67 (88.2%) were 20–22 years old. Also, 71 (93.4%) used a smart phone, 42 (55.3%) used WiFi by wireless LAN, and 53 (69.7%) used wireless LAN at home. Regarding the use frequency by practicum subjects, the percentage of answers "often used it" and "used it" were the highest in child care nursing (83.5%), followed by maternity nursing (62.9%), Critical nursing (36.9%), and chronic nursing (34.1%)(Fig.1). Regarding places of use, the devices were most frequently used at home and in dormitories (93.9%), but less at college (31.8%) and practicum facilities (21.2%). Regarding times of use, they were most frequently used during 21:00–24:00 (80.6%) and 16:00–21:00 (53.2%), but less during practicum. The use frequency of educational material contents on the terminal tablet shows that the percentage responding that they "often used it" and "used it" were the highest (84.8%) for the electronic textbook, followed by nursing skill videos (42.3%), knowledge cards (19.7%), and example educational materials (22.7%)(Fig.2).
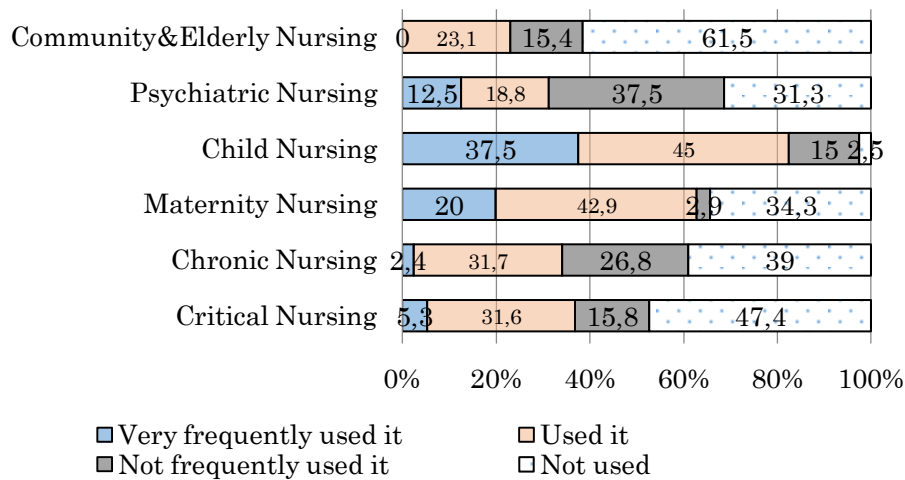

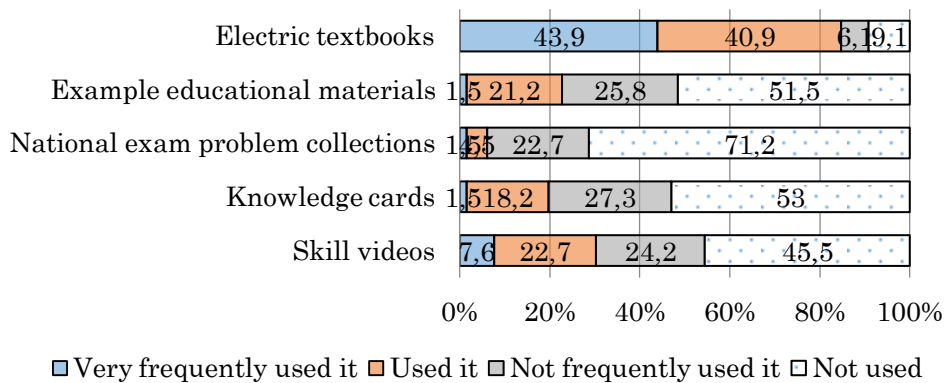Figure 1. Use frequency for using the terminal tablet by practice subjects

Figure 2. Use frequency of contents for using the terminal tablet

Regarding the usefulness of the terminal tablet's educational material contents, the percentage of those who answered "very useful" and "useful" were the highest for electronic textbooks (76.6%), followed by skill videos (43.6%), knowledge cards (29.5%), and example educational materials (13.6%).

As to the usefulness of the terminal tablet's functions, the percentage of those who answered "very useful" and "useful" were the highest in the dictionary search function (76.6%), followed by the Web search function (66.1%), hand writing (marker) function (62.9%) and bookmark function (58.8%).

In terms of the practical utility of the terminal tablet, the percentage of those who responded "very easy to use it" and "easy to use it" were the highest in the basic operation (78.8%), followed by dictionary search function (76.6%), Web search function (66.1%), hand writing (marker) function (62.9%), and bookmark function (58.8%).

4. DISCUSSION

The use status of the terminal tablet varied depending on the subject of practicum. It was more frequently used in child nursing and maternity nursing; it was less commonly used in chronic nursing and psychiatric nursing. As to frequently used contents, the electric textbooks were frequently used. Furthermore, the high use frequency of utilization of the search function and bookmark function shows that participants often used the electronic textbooks. Among the electronic contents, nursing skill videos were frequently used. Because nursing students need to confirm the nursing skills in advance before helping nurse patients in nursing practicum, it is very useful to see the videos of nursing skills anytime, which are expected to contribute to achieving their learning effects.

In addition, the terminal tablet, even if mobile, was used more frequently at home. It was necessary to encourage the participants to use practicum facilities and ask the staff of the practicum facilities for their cooperation. Furthermore, although the web search function was often used, because the penetration of wireless LAN at home is about 50%, if penetration expands, the web search function's use rate can be expected to grow. In terms of practical utility, even given the tablet's basic operation, dictionary search, and web search functions were evaluated to be easy to use, note-making functions were not frequently used and availability was also not good, which suggest room for improvement. Additionally, because the participants used the terminal tablet with paper textbooks for learning and because they felt the importance of the paper textbooks, the terminal tablet is expected to serve as an important teaching aid.

5. CONCLUSION

The "Digital Nursing Dictionary (Ver.2)" with the terminal tablet developed this time had electronic contents and electronic textbooks provided by a web system. Because it allows the users to use electric educational material contents and electronic text-books in a unified manner, it is expected that these books will contribute to achieving the users' learning effects. Among them, the utilization rate of the electronic text-books was high. Their availability would be improved if users became accustomed to using them, making them an effective educational material for use in future studies. The use frequencies of the terminal tablet's functions vary. Therefore, we must make improvements by narrowing down the necessary functions and by making actions easily accessible for anyone to use it.

REFERENCES

Yumiko,N ,and Yukie,M, Kaori.F., 2013, Terminal Tablet as Electric Textbooks for Nursing Practicum. *HCII 2013.* Las Vegas Nevada, USA,.

Bernard M. G. and Cathryn J., 2006, A mobile clinical e-portfolio for nursing and medical students, using wireless personal digital assistants (PDAs), *Nurse Education Today,* Vol. 26, pp. 647–654.

Yukie, M. Yoiciro,S.,2006. Development of E-learning for Problem solving Approach of Nursing Students, *Studies in Health Technology and Informatics*, Vol. 122, pp. 919.

Yukie,M, Yumiko,N.and Yasuko,M. Yoichiro,S,.2009.Development of ubiquitous on demand study support environment for nursing students*, HCII in Various Application Domains LNCS.* Vol. 5613, pp. 149–155.